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ABSTRACT

This four-part report describes the development of a plan for Hennepin County (Minnesota) Library's (HCL) next steps in the automation of operations including the public catalog, cataloging, circulation control, and acquisitions. The objectives of the plan were to improve patron access to materials and to provide for cost effective operations. Part 1 begins with a discussion of six constraints and/or opportunities that point to a need to undertake a formal process to develop such a plan, and then describes a process for including staff from all divisions in the process, and lists the products to be expected from such an undertaking. Part 2 presents a list of requirements for circulation control, the public catalog, cataloging, and acquisitions that were developed by task forces and reviewed by the project team. This section of the report is the basis for developing specifications to be included in the RFP (request for proposal). Each of the requirements in the public catalog and cataloging section has an "issues" section; these are issues that arose after an examination of the marketplace and the library's needs that are yet to be resolved. Part 3 lists six alternatives for meeting the requirements being posed by the task forces. Part 4 presents a summary of the selected alternative--to actively seek an integrated system from the marketplace--and outlines the rationale and implementation plan for this alternative. An executive summary of the report is included. (MAB)

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Hennepin County Library Automation Project:
A Plan for the Next Steps in the Automation of the Public Catalog, Cataloging, Circulation Control and Acquisitions

December 1987 - June 1989

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Executive Summary

EXECUTIVE SUMMARY

CONCLUSION

The Hennepin County Library should actively seek from the marketplace a system that integrates circulation, cataloging, an online public access catalog and, as soon as possible, acquisitions. The rationale and implementation schedule for this project are outlined in Part IV of this report: "Selected Alternative".

The library wishes to thank the staff of Twin Cities metropolitan libraries for their time, expertise and graciousness during the many site visits conducted by library staff. The library also thanks library automation vendors for their willingness to demonstrate their systems and answer the many questions posed to them.

PROCESS

Introduction:

In 1988, the Hennepin County Library established a process to prepare a plan for the next steps in the automation of HCL operations including the public catalog, cataloging, circulation control and acquisitions. The objectives of the plan were to improve patron access to materials and to provide operations which are cost effective. The planning process was to occur during 1988 with a plan to be in place by March 1989.

Three task forces guided by a project team were established. Their assignments were: 1) to describe the current environment at the library, 2) to develop requirements for the public catalog, cataloging, circulation control and acquisitions, 3) to become familiar with the marketplace, 4) to pose and analyze a set of alternative plans, and finally 5) to select one of the alternative plans. The task forces and project team produced reports at each stage of the process. These were widely distributed to all HCL staff who were asked to comment and question. The details of the process can be found in Part I, Section C of this report. A list of members of the project team and the task forces along with their charge follows this "Executive Summary."

The Current Environment:

Part I of this report discusses several constraints and/or opportunities that were identified in early 1988. Some of the most important of these were that computer systems operational in the library were aging and needed replacement; that the new generation of integrated systems offered considerably more capability than those systems available in 1983 when the library last formally scanned the market; and that the library's enriched bibliographic records and automated authority files would take good advantage of the capabilities of the new generation of computer systems. Based upon this analysis of the environment, the library staff felt that the time had come to formally plan the next steps in the automation of the public catalog, cataloging, circulation control, and aquisitions.

Requirements and Marketplace:

Part II of this report is a list of requirements for circulation control, the public catalog, cataloging, and acquisitions. These were developed by task forces and reviewed by the project team. This section of this report will become the basis for developing specifications to be included in the request for proposal/bid. Part II can be viewed as the heart of this report.

In the development of the requirements, each task force member was required to become familiar with the current computerized operations of the library and with what is available in the marketplace.

Task force and project team members became familiar with current library operations through oral and written presentations given by Technical Services staff. Members became familiar with the marketplace through site visits to other metropolitan area automated libraries, through two-day demonstrations provided by likely vendors whose catalogs were not represented in the metropolitan area, through attendance at conferences, and through articles and abstracts of articles provided to project team members.

The requirements in the public catalog and cataloging section have "issues" sections. As members viewed the marketplace and examined needs, a number of issues arose that could not be settled as part of this process but will need to be settled either before a request for proposal is prepared or before a system is implemented.

One of the most interesting things about the requirements section is that the public catalog requirements are written from the point of view of the user. This was a major task but should prove to be exceedingly useful in a formal evaluation of systems.

Alternatives for Meeting Requirements:

Part III of this report lists six alternatives for meeting the requirements being posed by the various task forces. (These alternatives are general, not vendor specific e.g. COM vs. CD-ROM vs. Online for the public catalog.) The project team was to answer nine questions for each alternative. The questions are as follows:

1. Which of the requirements prescribed by the task forces would this alternative satisfy?
2. Which requirements would this alternative not satisfy?
3. What benefits would this alternative provide?
4. What problems would this alternative present or leave unsolved?
5. How might the answers to 1 through 4 change or affect service to the public?
6. What are the cost factors and general costs of implementing this alternative?
7. What are the cost factors and general costs of operating this alternative?
8. How might the answer to 5 through 7 change or affect the library?
9. Where would this alternative leave the library after five years?

After an initial analysis of the alternatives during which some of the above questions were answered, it became clear, based on the requirements, that some alternatives were clearly more desirable than others. The project team, then, decided to concentrate on the analysis of two of the most likely alternatives.

This was Alternative 4 (CLSI system expanded for all functions) and Alternative 5 (to actively seek an integrated system from the marketplace).

The alternatives involving a CD-ROM catalog were discussed and investigated at some length. It was determined that a CD-ROM catalog, measured against the requirements and viewed in light of where this would leave the library in five years, should be considered if an online catalog as part of an integrated system was impossible for some reason. Project members viewed CD-ROM as a relatively expensive interim solution for a public catalog. For that reason an in depth investigation of CD-ROM was tabled until such time as the search for an integrated system proved futile.

The choice between Alternative 4 and 5 was based on the answers to the nine questions listed on the previous page. Comparing requirements to actual functions was fairly straightforward in Alternative 4. The comparison of requirements against function for Alternative 5 was accomplished through 12 site visits to automated libraries in the metropolitan area, two lengthy demonstrations provided by vendors whose catalogs were not represented in the area, discussions with non-metropolitan automated libraries and demonstrations at conferences.

Project team and task force members evaluated computer systems in the marketplace using the specific requirements as identified in Part II of this report. The functions of these systems, then, were examined against specific requirements at specific points in time. Because it would probably not be appropriate to generalize from these snapshots, the evaluations are not included in this report. Readers interested in discussing the evaluations with library staff should contact the library.

Selected Alternative:

The project team did select Alternative 5. This alternative is summarized in the above "Conclusion" part of this "Executive Summary". The rationale and implementation plan is outlined in Part IV of this report.

HENNEPIN COUNTY LIBRARY
LIBRARY AUTOMATION PROJECT PARTICIPANTS

Committee: Library Automation Project Team

Charge: To present to the Administrative Committee a number of alternatives for the continued automation of Hennepin County Library (HCL) operations including the public catalog, cataloging, circulation control, and acquisitions. Each alternative should describe how well HCL needs would be met, what the special benefits of that alternative might be, the long and short term impact on the library and the cost.

Members:

Judy Adams, Golden Valley
Elizabeth Anderson, TSD/ACCS
Sandy Berman, TSD/Cataloging
Carol Cassell, TSD/ACCS
John Hafterson, TSD/Systems
Helen Halverson, SdIS
Marge McPeak, Eden Prairie
Jeanette Sullivan, TSD/Systems
Lois Tetzloff, TSD/Admin.
David Waldemar, MSS
Gretchen Wronka, CSSD
Sharon Charles, TSD, Chair

Committee: Library Automation Project - Public Catalog/Cataloging Task Force

Charge: Using the 1983 OPAC report, to develop and prioritize a list of elements and functions of a public access catalog and cataloging for Hennepin County Library. To become familiar with the state of the art of automated public access catalogs and cataloging systems. To work with the Project Team to develop alternatives for the continued automation of the public catalog, cataloging, circulation control and acquisitions.

Members:

Judy Adams, Golden Valley
Sandy Berman, TSD/Cataloging
Janet Brownell, Rockford Road
Sandra Davidson, SdP
Christopher Dodge, TSD/Admin.
Ann Eccles, CSSD/OR
Paula Fox, St. Anthony
Michael Gladhill, TSD/Systems
John Hafterson, TSD/Systems
Helen Halverson, SdIS
Marge McPeak, Eden Prairie
Judy Nelson, TSD/Cataloging
Solveig Nilsen, Ridgedale
Lois Tetzloff, TSD/Admin.
Gretchen Wronka, CSSD, Chair

Committee: Library Automation Project - Circulation Task Force

Charge: To develop and prioritize a list of elements and functions of a circulation control system for HCL. To become familiar with the state of the art of automated circulation control systems. To work with the Project Team to develop alternatives for the continued automation of the public catalog, cataloging, circulation control and acquisitions.

Members:
Martha Bray, Penn Lake
Carol Cassell, TSD/Systems
Elaine Daravingas, Champlin
Gaye Doeden, SdSS
Carmen Kowal, TSD/Circulation
Biruta Spruds, MSS
Elizabeth Anderson, TSD/ACCS, Chair

Committee: Library Automation Project - Collection Development/Acquisitions Task Force

Charge: To develop and prioritize a list of elements and functions of an acquisitions system for the Hennepin County Library. To become familiar with the state of the art of automated acquisitions systems. To work with the Project Team to develop alternatives for the continued automation of the public catalog, cataloging, circulation control and acquisitions.

Members:
Jane Frymire, TSD/Systems
Bette Kluck, TSD/Acquisitions
Pat Kulseth, MSS
Julia Morgan, Southdale
Loren Taylor, St. Louis Park
Chuck Warrington, ASD
David Waldemar, MSS, Chair

Secretary: Charlene Tolifson, TSD/Admin.

Part I

Planning Goal, Strategy and the Environment

PLANNING GOAL, STRATEGY, AND THE ENVIRONMENT

December 1987

A. INTRODUCTION

Part I begins with a discussion of six constraints and/or opportunities which point to a need to undertake a formal process to develop a plan for the next steps in the automation of HCL public catalog, cataloging, circulation control and acquisitions. The second half of Part I describes a process for including staff from all Divisions and lists the products to be expected from such an undertaking.

B. CONSTRAINTS AND/OR OPPORTUNITIES

1. Future of the ACCS

We are moving toward a decision point regarding our long term relationship with CLSI and the future of our circulation control system. The ACCS is approaching the upper limit of number of terminals it can physically support with its current configuration of central processing units. It is also near its maximum workload. Another central processing unit could be added; however, CLSI acknowledges diminishing returns with the addition of more processors and is planning a different configuration for large systems.

CLSI representatives have suggested a growth path which reflects their planned product development. They suggest switching to their planned UNIX operating system and adding another larger central processing unit in order to add more terminals (at a cost of near $500,000). This growth path represents a possible way to add more terminals to our circulation control system. It is a major investment.

As we move toward what is a major decision point in circulation control, we should determine what, ideally, HCL automation of circulation, the public catalog, cataloging, and acquisitions should look like in five years. We need to answer the following questions. What is the status of the CLSI integrated system--should we plan toward its implementation? Are there other alternatives that would better meet our needs? Given answers to those questions, how heavily should we invest in our current ACCS? Finally, we need to tie together our need for terminals and our decision about how heavily to invest in our current ACCS with our plans for new buildings and building expansion.

2. Cataloging Study and New Technology

TSD is about to undertake an evaluation of cataloging procedure and policy and its cost effectiveness. This evaluation is best done in conjunction with planning for using technology to improve cataloging and the public access catalog.

Many things have changed since the 1981 Cataloging System Study. One thing that hasn't changed is our inability to change, add, and view bibliographic records online. Our need to work with a dynamic database in a batch way necessitates many paper steps. The examination of cataloging policies and procedures such as how bibliographic data is changed, added or stored, cannot be done in isolation.

In general, we are beyond the time that any studies of functions such as cataloging or circulation control can be done in isolation. One reason for this is that patrons don't think of the functions as being isolated. For example, the Council on Library Resources Studies (described in #3 below) found that the third highest ranked characteristic for improvements in a public catalog as ranked by the public is "ability to know if a book is checked out." It is the patron and the patron's increasing understanding of what computers should be able to do that is driving librarians to analyze such functions as circulation control, the catalog, cataloging and acquisitions as a whole.

Dramatic changes in the way we catalog will undoubtedly be visualized and will occur as we plan for and implement new technology. As we look at the future of our circulation control system and our public catalog we must pay equal attention to technology in service to cataloging so that advances in one area, such as the public catalog, don't cause setbacks or even more complicated procedures in other areas such as cataloging.

As we engage in the study of cataloging policies and procedures in 1988, we will need to begin to visualize how cataloging policy and procedure will fit into an overall automation plan. The cataloging study should be done in light of advances in technology and HCL's likelihood of participation in that technology.

3. Third Generation OPACs and Enriched Bibliographic Records

Online public access catalogs have improved substantially since the HCL OPAC Task Force surveyed the marketplace in 1983. At the 1986 Integrated Systems Conference, Charles Hildreth announced that vendors have gone beyond the first generation of automated systems (the systems the HCL OPAC Task Force examined in 1982/83). In 1986 we were in the second generation of systems. Many things became available in 1986 that weren't available just three years previous to that. This included key word searching, shelf list browsing, multiple display formats, and many other things.

In 1987, vendors are beginning to move toward a third generation of automated systems. Hildreth describes this third generation as including, among other things, authority control, ordinary language search expressions, automated search helps at point of need, and enriched bibliographic records.

Hildreth clearly sees the third generation of systems to be more of a joint vendor/librarian venture than any of the previous generations of systems.

Vendors are certainly working hard on such things as authority control and better search helps. Enriching bibliographic records, however, is in the hands of the library community.

Enriching bibliographic records means putting enough information about a book or other material into the record so that the search power of the third generation system has something meaningful to index and search. Hildreth speculated that this jointly developed third generation would be available by 1990.

Hildreth has reason to make such a prediction. Much of the current library literature on OPACs has, as its theme, a call for (or actual suggestions for) enriching bibliographic records. This is in response to the 1982 Council on Library Resources (CLR) sponsored studies of how patrons use online catalogs. Sixteen online catalogs and 20 libraries, including four public libraries, were participants in the 1982 CLR catalog studies. Besides the traditional tools of questionnaires and interviews, researchers were able to analyze the actual searches done by patrons and recorded by the computers.

The findings of the CLR studies questioned many beliefs of the library community about catalog use. The studies consistently found that most users use subject or topic words in their search rather than searching for known items. About 59% of all searches were for subject information. Users were asked how the OPAC could be improved. Three of their six top ranked suggestions related to subject searching:

1) Ability to view a list of words related to my search words
2) Ability to search a book's table of contents, summary or index
3) Searching by any words in a subject heading

(The middle school users at the Dallas Public Library suggested that when there are no matches to the word you put in, the computer should tell you what other words to try.)

The library community is now embarking on a number of studies for ways to enhance the bibliographic records. Four libraries (LC, New York State, U of Illinois at Urbana-Champaign, and the Public Library of Franklin and Columbus County) participated in a project to add the terms from the Dewey Decimal Classification Schedule to the OPACs. When patrons enter their subject term, the computer searches an index that includes the terms taken from the Dewey schedules and index. (Karen Markey reports on the problems with this search option in CATALOGING AND CLASSIFICATION QUARTERLY, Spring, '87, pp. 37-68.)

Currently, the Council on Library Resources, OCLC and the University of Michigan are working on a $310,697 budgeted project on "Increasing the Accessibility of the LC Subject Headings in Online Bibliographic Systems." The project will explore ways to guide users from the search terms they actually use to the LC subject headings.

Charles Hildreth reports[1] that the online catalog at Purdue University's Engineering Library has been enhanced through the addition of data from the edited tables of contents for most of the monographs in the library's collection. OCLC has awarded a grant to Mark Kinnucan at the University of Western Ontario to study "Table of Contents in OPACs." Hildreth also reports that the Bibliographic Services Division of the British Library is investigating adding tables of contents to MARC records.

Pauline Cochrane in her book Improving LCSH for Use in Online Catalogs (Libraries Unlimited, 1986) suggests an array of ways to add more information to the bibliographic record. She also points out that the average MARC record has fewer than two subject headings and fewer than 1% of MARC records have content notes or abstracts. The OPAC user, then, has little to search for no matter how powerful or wonderfully designed the computer itself is.

The current library literature on OPACs reflects the library community's increasing realization that the burden for producing an adequate online public access catalog lies with the library community as we move toward the third generation of machines. Karen Markey and Francis Miksa in their review of the 1986 subject access literature conclude that the 1986 literature is "rich, concentrated, technical and often based on empirical investigation. The cause for this seems obvious--the growing need to improve subject access in online catalogs and to improve the kinds of controlled vocabularies used for this kind of work."[2] The vendors are improving the software but the library community is now faced with presenting a database worthy of the search capabilities being developed.

This is a very exciting time to be planning. We will be looking at third generation systems and HCL is in a good position to use their capabilities. This brings me to the fourth opportunity/constraint.

4. HCL Position Regarding Use of New Technology

The Hennepin County Library is in a very excellent position in regard to planning for new access tools. There are a number of reasons for this:

A) We already have enriched bibliographic records and automated authority files necessary to take advantage of third generation OPACs.
B) Because of the existence of the bonding authority, it appears that we may have the resources necessary to implement a catalog which would be a great improvement over the current COM catalog.
C) The HCL 1987-91 Guidelines Toward New Service indicates that better access to HCL materials is part of the five year plan. One of the service components of the Plan is to "install an online public access catalog" (p. ii). Planning for a new type of catalog is a major undertaking and we need to begin as soon as possible.
D) There may be state funding available in upcoming years. We need to be in a position to take advantage of such funding should it become available.

5. Emergence of CD-ROM Technology

A new technology, CD-ROM, has entered the marketplace and is being used by libraries for a public catalog. HCL staff have been following the CD-ROM developments with some interest. Upon casual examination, I have found the CD-ROM catalog search software evolving quickly. Prices for the production of a catalog on CD-ROM have dropped substantially in the past year. With this in mind, I asked John Hafterson to prepare some estimates regarding the cost of using CD-ROM technology to access HCL materials. I asked that he also provide a brief summary evaluation of using such technology in light of the access requirements described in the 1983 OPAC Task Force Report.

As it turns out, conversion to CD-ROM technology is not a step to be taken lightly. Costs of the actual conversion are not insignificant. To replace our

fiche readers with CD-ROM readers (which are microcomputers) would cost about $500,000. This would replace none of the existing costs of supporting the ACCS. Additional costs and efforts of conversion include training staff and patrons, and evaluating (and perhaps upgrading) agency electrical capacities and furniture. We need to look at this very interesting option in conjunction with other alternative tools for better access to the HCL collection.

6. Pressure From Surrounding Libraries

Other libraries in the area have implemented or will implement online public access catalogs as part of integrated systems. The public is already aware of this. HCL public services staff have indicated that patrons do ask about our automation plans. If we do not have an online public access catalog while our neighbors do, public service staff must be able to explain why that is the case.

C. PROPOSED PROCESS TO DEVELOP AN AUTOMATION PLAN

Goal and Objectives:
To prepare a plan for the next steps in the automation of HCL operations including the public catalog, cataloging, circulation control and acquisitions.
Objectives of the plan:
(1) Improve patron access to HCL materials
(2) Provide HCL operations which are cost effective

Key Groups:
(1) Administrative Committee. The purpose is decision making.
(2) Project Team composed of representatives of library staff and technical experts. This should be a small team relying on task forces for broader participation. It should include some Administrative Committee members. The purpose is to direct the effort and prepare reports or recommendations to the Administrative Committee.
(3) Various Task Forces. This composition will depend on the tasks. The purpose is to accomplish specific tasks as assigned by the Project Team or to provide forums to digest information produced. Appropriate persons should be selected as Project Team members who could easily call together the appropriate staff into a task force and function as the Chair.
(4) Staff. HCL staff who read and comment on reports.

Summary of Products and Timetable:
(The dates referred to are target dates, milestones on the way to project completion. They will undoubtedly shift within the context of the final deadline, as the project proceeds.)
(1) PART I OF REPORT: "Goal, Detailed Strategy For Meeting Goal, Opportunities and Constraints"
    a) first draft - this proposal - January 8, 1988
    b) last draft - April 30, 1988
(2) Creation of the Project Team - January 30, 1988
(3) Strategy for education HCL staff regarding state-of-the-art technology - March 30, 1988
(4) 1989 Project budget estimate - March 15, 1988
(5) PART II OF REPORT: "Needs and Requirements For Automation of Public Catalog, Cataloging, Circulation Control, Acquisitions"
    a) first draft - November 1988
    b) last draft - January 1989
(6) Reports on state-of-the-art technology - ongoing.

(7) PART III OF REPORT: "Alternatives for Meeting Requirements"
a) first draft - November 1988
b) last draft - January 1989
Alternatives are developed based on knowledge of state-of-the-art and the marketplace. Alternatives are general at this point (i.e., not specific vendors). For each alternative the report indicates:
a) to what extent the requirements are met by that alternative
b) special benefits
c) the impact of that alternative on the library

(8) PART IV OF REPORT: "Selected Alternative(s)"
This is a detailed analysis of selected alternatives including costs and time line for implementation. Issuing of Requests for Information (RFIs) may be necessary.
a) first draft - March 1989
b) last draft - May 1989

(9) Creation of an implementation Team and Plan (implementation means implementation of the alternative which could include writing and issuing a Request for Proposal (RFP) if a new computer system is part of the alternative) - March 1989

(10) 1990 Implementation Team budget and plan to finance initial purchase of any computer system specified in selected alternative - March 1989.

Process Detail

(These are target dates which will and have changed as the project proceeds)
Administrative Committee (January 30, 1988)

1. Discusses first draft of PART I OF REPORT by:
   a. Discussing and expanding the opportunities and constraints.
   b. Determining the need and mechanism to plan for continued automation of the catalog, cataloging, circulation control and acquisitions.
2. Creates a Project Team
3. Charges Project Team to:
   1) Explore and expand on opportunities/constraints.
   2) Educate themselves and other HCL staff regarding state-of-the-art technology and the marketplace.
   3) Develop requirements.

Staff (February 1, 1988)

1. Receives memo proposing the next steps in the planning for the automation of the public catalog, cataloging, circulation control and acquisitions.
2. Is invited to comment to Project Team.

Project Team (February 29, 1988)

1. Receives comments from staff.
2. Discusses the goal, mechanism and opportunities/constraints.
3. Reports this discussion to Administrative Committee.
4. Begins work on PART II OF REPORT - Requirements. The OPAC requirements should be examined. Other requirements developed as needed. (February 29, 1988)
5. Requirements Task Forces can be created here to develop requirements and outline needs for specific areas or to react to requirements already developed.

Administrative Committee/Project Team (February 29, 1988)
Meets to negotiate differences in goal, mechanism and opportunities/constraints if necessary.

Project Team
1. Produces draft of PART I OF REPORT which includes the Goal, outlines the mechanism and explores the opportunities/constraints. (March 15, 1988)
2. Produces 1989 project budget estimate.
3. Develops a strategy for educating themselves and other HCL staff regarding the state-of-the-art technology and the marketplace. (March 15, 1988)
4. Education Task Forces can be created here to learn and report about specific areas. Some travel may be necessary.

Administrative Committee
1. Receives the draft of PART I OF REPORT and approves it. (March 30, 1988)
2. Participates in learning about various aspects of automation as members of Education Task Forces. (Ongoing)
3. Receives information about the state-of-the-art from the Project Team. (Ongoing)
4. Regularly reviews, discusses and approves reports on the requirements (PART II OF REPORT) as they are provided from Project Team. (March - July 1988)

Staff
1. Receives draft of PART I OF REPORT and sends comments to Project Team. (April 15, 1988)
2. Receives reports on new technology from Project Team. (Ongoing)
3. Receives sections of requirement reports (PART II OF REPORT) as appropriate and sends comments to Project Team.

Project Team
1. Prepares draft of PART II OF REPORT - Requirements, and sends to Administrative Committee for approval. (August 1988)
2. Analyzes staff comments on PART I OF REPORT and reports to Administrative Committee. (April 30, 1988)
3. Creates Task Forces chaired by Project Team members to work on PART III OF REPORT - Alternatives, if appropriate. (July 1988)

Administative Committee
Approves completed PART II OF REPORT - Requirements. (August 1988)

Staff
Receives completed PART II OF REPORT - Requirements, and sends comments to Project Team. (September 1988)

Project Team
1. Develops PART III OF REPORT - Alternatives for meeting requirements based on knowledge of the state-of-the-art and the marketplace. Alternatives are general at this point (i.e., not specific vendors). See Product section for content detail. (November 1988)
2. Sends PART III OF REPORT - Alternatives, to Administrative Committee. (November 1988)
3. Analyzes staff comments on PART II OF REPORT - Requirements, and

reports to Administrative Committee. (October 1988)

Administrative Committee (December 1988)
1. Receives PART III OF REPORT - Alternatives.
2. Discusses them.
3. Selects one alternative if possible.
4. Calls for more detailed information on the selected alternative(s). (Part IV of report)

Staff
Reviews the discussion of PART III OF REPORT - Alternatives, and is invited to comment to Project Team. (December 1988)

Project Team
Provides PART IV OF REPORT - Selected Alternatives. This is a detailed analysis for the alternative(s) selected by Administrative Committee including costs and time line for implementation. (March 1989)

Administative Committee (March 1989)
1. Reviews PART IV OF REPORT - Selected Alternatives.
2. Selects an alternative if more than one has been detailed.
3. Creates an implementation Team and Plan. (Implementation means implementation of the alternative which could include writing and issuing an RFP if a new computer system is part of the alternative.)
4. Produces 1990 Implementation Team budget and plan to finance initial purchase of any computer system that is specified.

Staff
1. Receives PART IV OF REPORT - Selected Alternatives, and comments to Project Team.
2. Receives information about Implementation Team and plan.

NOTES

1. Hildreth, Charles. "Beyond Boolean: Designing the Next Generation of Online Catalogs" in LIBRARY TRENDS, Spring, 1987, p. 661.

2. Markey, Karen and Francis Miksa. "Subject Access Literature" in LIBRARY RESOURCES AND TECHNICAL SERVICES, October/December, 1987, p. 349.

These articles are available from TSD.

Part II

Requirements for Automation of the Public Catalog,
Cataloging, Circulation Control and Acquisitions

A. Circulation Control Requirements

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A. CIRCULATION CONTROL REQUIREMENTS

Hennepin County Library and library automation vendors have extensive experience with automated circulation control systems. As the Circulation Task Force studied circulation system alternatives and developed lists of HCL requirements, the question became not whether a system would support a specific circulation task, but whether and how it would help operators to accomplish those tasks as easily and well as possible. Not: does this system handle reserves, or multiple loan periods, or claims returned, or phone renewals, or differing fine rates; but how. Do the processes "flow" from one to another; are keystrokes wasted; is the information displayed, created, and maintained cleanly, efficiently; how is it accessed?

The requirements do not break each circulation task into discrete required components. They assume that among HCL's circulation requirements are such basic tasks as checking material in and out, renewing material, providing multiple loan periods, etc. Instead the requirements focus on how these tasks are accomplished, and particularly they emphasize aspects of circulation where Task Force members indicated that, based on their experience, improved system performance is required.

In developing bid documents for circulation control, the challenge will be to elicit a clear description of several complex and interrelated processes with simple "yes and no" questions.

1. General Characteristics

a. Response time must be excellent. This includes hardware response time, measured in seconds, and software "response time," measured in things like how many keystrokes and screen displays it takes to complete simple and complex patron transactions (e.g., accept a fine and bill payment, or, check out two books, renew another, inform of overdues, and accept a fine).

b. Throughout the system, presentation of information should be clear, logical, and customized for HCL operations. Staff at HCL should be able to modify text in standard screen messages to reflect local operations.

c. HCL should be able to suppress the display of fields available but not used in patron, title, and item records.

d. The system should allow for backwards scrolling or paging to allow for review of circulation displays just seen.

e. Function keys should be used extensively.

f. Software should accommodate terminal printers.

g. The system must accept segmented bar-code numbers. For staff ease, bar-code numbers should also be segmented when displayed at terminals.

h. The system must be able to support HCL data privacy policies developed in accordance with the Minnesota Data Practices Act. By statute, information about titles or subjects requested, reserved, or charged to patrons is private, to be made available only to the patron or, if the patron is a minor, the patron's parents or guardian.

2. Circulation Processes

a. The processes of charging and renewing materials, of checking on patron status, of informing patrons of overdues, bills, and/or fines, and of accepting payment for these charges, are often all part of a single transaction for a single patron. How easily staff can move among these processes goes a long way to determing how "staff friendly" the system is, as well as how efficiently it handles each patron's concerns. Entering a patron identifier (bar-code, name, or other) one time per patron must provide access to all of these processes for that patron, without having to re-enter the identifier.

b. The system must allow HCL to specify the number of renewals it will allow, by type of material, and must alert staff when that limit is about to be exceeded.

c. The system must not require that item bar-code numbers be scanned or typed in order to renew material. Staff must be able to select from a list of items charged to a patron, and must be able to specify which item(s), all, or none are to be renewed. HCL should be able to specify whether the list of items charged to a patron include overdue material and current loans or overdue material only.

d. The system should retain historical patron information concerning items claims returned and items lost and paid, to facilitate later refund and return handling. This information should be passworded, and should have to be specifically requested; i.e., it should not automatically display along with other patron status or financial information.

e. Patrons very frequently pay fines for overdue material when they return it. The system should be able to display a fines total for a group of returned material, and should deduct appropriate fine amounts paid from appropriate patron records, even if more that one patron record is involved.

f. Partial payment of fines and bills should be expected. Fines and bills should be reduced accordingly, with totals paid and remaining easily accessible.

3. Handling Requests for Material Not Immediately Available

a. The system must provide for a three-level reserve process: staff must be able to reserve a specific copy, any copy owned by a specified agency, or any copy in the system. Reports on reserves placed, filled, and on titles that exceed a specified copy-to-reserve ratio should be available for agency and system-level reserves.

b. The system must allow reserves to be placed on title records with no copies attached.

c. At the Library's option, patrons should be allowed to place their own reserves, providing there is some mechanism to handle reserves patrons might place on titles where no copies can be trapped (e.g, all copies either on shelf, withdrawn, at bindery, or in other non-circulating conditions).

d. The system should produce lists, in shelf list order by agency, of on shelf material requested by other agencies.

4. Circulation Support Processes

a. The system should allow for an interim shelving status between when an item is returned and when it is available on shelf, the amount of time allowed to be parameterized by agency.

b. To accommodate the checking in of a) bookdrop returns, b) material returned to other library systems, and c) material returned during downtime, the system must allow authorized users to backdate its default return date.

c. Equipment and programs must be available to support basic check out, renewal, and checkin transactions when the system is down. These transactions must be uploaded, in correct date and time order, when the system is again functional.

5. Circulation Records Maintenance

a. HCL cataloged material is entered into its circulation system centrally. Keeping the example of best sellers for twenty-five agencies in mind, provisions must be made for extremely efficient data entry of literally hundreds of copies of the same title, where only bar-code numbers and agency designations change.

b. Patron, item, and title records must be able to be added, changed, or deleted singly.

c. Staff must be able to group patron, item, or title records, in order to change individual fields in them efficiently. Staff should be able to set up defaults concerning the field(s) to be changed, and then effect the change by entering only the the patron, item, or title identifiers of the material involved.

d. Staff must be able to group patron, item, or title records in order to delete them by specifying only the patron, item, or title identifiers of the material involved.

e. The system must be able to globally change individual fields in all or groups of patron, item, or title records according to Library specifications.

f. The system must be able to globally delete patron, item, or title records according to Library specifications.

g. When patrons are issued replacement bar-code numbers, all information associated with the old number, including all financial transactions, must transfer to the new number.

h. In order to issue a replacement patron bar-code, the system should require no more than identifying the old patron record and then scanning the new number being associated with it. (The Library may have additional policy or procedural criteria that staff check prior to issuing a new bar-code number.)

i. When items need replacement bar-code numbers, circulation information, especially number of circulations, should transfer to the new bar-code.

j. Frequently fines have previously accrued on items later discarded. To help staff and patrons during fine payment transactions, the system must maintain title information associated with outstanding fines, even though the material may have been discarded.

6. Circulation Parameterization

a. Multiple categories or "dimensions" should be available to describe each item and patron. For example, items can be at the same time cataloged or uncataloged; fiction or nonfiction; large print or paperback; their Dewey numbers can reflect media and format designations. A system should be able to accommodate (at least) all of these dimensions. Similarly, patrons can live in this part or that of the same town; can belong to this library jurisdiction or that; can have a variety of borrowing privileges, etc. Patron groupings must acommodate multiple dimensions.

b. The Library must be able to specify a minimum of 20 loan periods and 20 fees, fine rates, and fine amounts according to material format.

c. The Library should be able to customize standard system messages on patron notices and screen displays.

d. Regarding title queries, each agency should be able to specify the agency order in which items will appear. (Agency A will display its own holdings first, followed by Agency B's and Agency C's. Agency B will display its own holdings first, following by C then A, etc.)

e. It should be a Library option whether or not to charge fines for days the Library (represented by the agency where the material is returned) is closed.

7. Circulation Reporting

a. The system needs to provide a wide variety of circulation, collection development and maintenance, and management reports.

b. Circulation reports should show circulation activity by terminal, agency and system and should be available for a specified period of hours, daily, monthly, and year-to-date.

c. Inventory reports should be available for each item statistical category. These should be available system-wide and by agency. It should be possible to know the exact size of the total collection or any part of it.

d. It should be possible to combine circulation and inventory of statistical category on the same report so that meaningful comparisons can be made. This should be available by agency and for the system.

e. Purge programs should be able to identify items with no circulation (or less than x circulations) for any length of time we specify. Also, these programs should be able to specify a classification or format, by agency or for the system, so that it would be possible to send each agency a printout that match the Library's weeding schedule (e.g., 800's in October, paperbacks annually, etc.).

f. A report should monitor high circulation titles. The circulation rate should be adjustable for different types of materials, e.g., children's fiction, adult mystery.

g. Purchase alerts should be automatically produced when the ratio of reserves to total copies of a title exceeds a specified amount.

h. There should be automatic notification when the Library is down to the last x number of copies (number to be specified by the Library) of a title, with the ability to suppress this notification when we buy only one copy or if we do not want to replace a title.

i. There should be a report of the average circulation per title over a specified number.

j. There should be a report of the average circulations by SCAT.

k. A report generator package should allow the Library to produce its own system reports. It should be able to accommodate requests for such ad hoc, on demand, reports as: a listing of all video cassettes, including the number of times each has circulated; the total number of HCL patrons who have used the system since a specified date; the total number of audio-visual material currently at any given agency, broken down by media type; a list of audio-visual material at a specified agency that has not circulated since a given date; a list of audio-visual material at a specified agency that has circulated more than a specified number of times.

l. Counts of either patrons or items should reflect only "real" patrons or "live" items. Items discarded, missing, claims returned, etc. but still on file, should not be counted, nor should "pseudo-patrons" that represent anything other than people.

B. Patron Access Catalog Requirements

B. PATRON ACCESS CATALOG REQUIREMENTS

1. Getting the computer system to the starting point for searching
[Beginning a search]

Description:
Catalog users walking up to an online catalog terminal find either an opening screen, or a screen displaying some part of the last patron's search. The system needs to facilitate reaching a starting point for searching.

Needs:

a. How-to-start-over instructions should always be visible, not just on the opening screen. The means of getting out of someone else's search should be simple, and should always be evident.

b. The online catalog should return to its opening screen after some minutes of receiving no instructions.

c. A timeout should be implemented with at least one warning and an opportunity to delay the timeout. This is simply a matter of not surprising the slow novice user.

d. The means of getting to help screens should also always be visible and mnemonic: the letter "H" is an obvious example.

e. The system should seldom display esoteric terms (e.g. "authority"), and it should seldom employ terms which have multiple meanings (e.g. "browse").

f. Because many library patrons are experienced users of other library systems, or of other computer systems, the system should use standard terminals, and it should use standard keys for their normal functions.

g. The library should be able to choose the type of opening screen -- tutorial or an invitation to begin searching -- and the content of the messages.

h. Dial access from remote sites must be provided.

i. Printed instructional handouts will be provided for both in-the-library and remote access searchers.

j. Terminals or microcomputers in some or all libraries should be equipped to allow disabled patrons to search the catalog. Specialized devices should permit users with limited vision, lack of manual dexterity, or other disabilities to use features available with regular terminals.

k. Color can be especially useful to the novice user, if it is used judiciously, without crowding or cluttering the screen.

Issues:

- Did the CLSI system sometimes offer both "quit" and "start over" as acceptable next steps? HCL searchers did not remember. Are too many available options confusing?

- Does HCL prefer to open with a tutorial or welcome screen or with a constant invitation to begin searching? Some staff find welcome screens irritating and prefer to see instructions immediately. One suggestion is a combination: Welcome to HCL. To begin your search...

- Did any catalog we have used have an especially good means of starting out? Was the design that of the library or of the vendor? Are two screens of instructions acceptable?

- How much information should be on the screens and in print? DRA may add windowing sometime later.

- DRA's Easy mode keypad search could help some disabled patrons conduct limited searches. Is it possible to offer or reasonable to demand <u>identical</u> services to able and disabled patrons?

2. Finding out what the catalog contains
[Database contents]

Description:
Catalog users will approach the online system not knowing what it contains. The system should inform them of the contents and refer them to alternative sources for other materials/services. The system must provide access to the selected contents.

Needs:

a. The database contents and limits should appear on the screen and in a printed guide.

b. The system must be able to store and index the content of all existing HCL bibliographic and authority records.

c. Headings in the catalog must be authority-controlled with see and see-also references and public notes visible to the public.

d. The online catalog, circulation, and acquisitions files must either share a common bibliographic database or be linked so they appear to be one file.

e. Item location and circulation status should be available for titles with items. On-order, in-process or other special status must be clearly visible for titles without items.

f. Author, title and series access must be available for the agency-purchased paperbacks now specified for title-specific treatment.

g. The system should provide a means to store and access community resources and events. It should provide bulletin boards for information such as agency hours and programs, and electronic mail for communication among agencies and between the library and patrons.

h. A system could in principle store a limited number of standard searches on topics searched very frequently.

i. The system should also be capable of storing maps. It should display maps of the libraries, indicating where various types of materials are shelved, and contain road maps showing agency locations.

j. Online databases should be accessible from online catalog terminals. Online catalogs from neighboring libraries, other libraries using the same vendor's system, and databases for special needs (e.g. National Library for the Blind) should be accessible from online catalog terminals.

k. The system should be linked to machine-readable magazine and newspaper indexes and Monthly Catalog. This could be in CD-ROM or online.

l. The system must provide a means to store and access in-house files, directories and indexes (e.g., fugitive fact, consumer, song, and telephone directory indexes).

Issues:

- Should specifications for a system include requirements pertinent to the fugitive facts file, or only a request for guidance in means of including this (kind of) file in the catalog? Staff feels this file's value does not necessitate or justify special provisions for it. It might be handled best as an addition to the catalog proper.

- How many government documents should be cataloged/included?

- How much on-order information should be available to the public? To staff? Do we want all items displayed to the public when there are hundreds? Should nearby agencies or area library holdings display immediately after those in this agency?

- Should references to pamphlets, magazine articles, telephone directory indexes, consumer and handicraft indexes, and government documents be handled by means of notes and cross references spread throughout the catalog, by tutorial screens, or both? A public note will be added under TELEPHONE DIRECTORIES to See Librarian immediately. Only area libraries have extensive telephone book collections. HCL should consider Phone Back service to locate information since directories are expensive.

- Would the benefits of having community calendars and community services in the catalog justify the effort needed to maintain this data in each of the libraries? Requirements should be for the capability to include it. Maintenance and use will require new HCL policies. PIO might be involved.

- Screen scrolling must be controllable by the public.

- Online pathfinders were stored within separate MARC records in the Geac system.

- The need for more terminals and a real concern for response time accompany providing magazine indexes online.

- Some libraries with electronic mail capabilities allow patrons to leave reference questions for librarians. This service was suggested as particularly valuable for disabled users.

3. Specifying the type of data to be searched and the type of search to be done
[Search types and modes]

Description:

Users cannot walk up to a system and just type in search terms. They must communicate with the system either by selecting menu options or entering commands or a combination of both. The software must be told to search for exact words in specified indexes, or to look for keywords (terms) in appropriate indexes.

Needs:

a. The searcher should not have to memorize commands in order to choose the type of data to be searched or the type of search to be done. Choices must be presented on an unambiguous list or very simple instructions must appear which show how to form the necessary commands.

b. The database must be searchable by exact author, title, subject, call number and series.

c. The database must be searchable by keywords in all fields of MARC records. The library must be able to decide which index contains which MARC fields and subfields, with some fields and subfields used in more than one index.

d. The searcher should be able to specify searching of whole records or of chosen fields within the record.

e. All available search options should be listed on the initial screen.

f. The library should be able to compose the names or descriptions for its indexes.

g. Experienced users should be able to substitute commands for successive menu choices.

Issues:

- All but one of the systems examined to date have required the choice of the type of data to be searched and the type of search to be done to be made simultaneously. The exception, the CLSI system, deferred the selection of search mode until after terms had been entered. The system selection team may have to decide early whether this difference is desirable, unacceptable, or something in between.

- All but one of the systems examined thus far have displayed what appeared to be all available choices on one screen. The exception, the Dynix system as implemented at Ramsey County, required the sophisticated user to choose "other" methods, and then to choose from a second list of search types and modes. Are second screens necesssary and workable?

- Acceptable commands should not vary between search methods in the same catalog. DRA complied with NISO standard commands in keyword searching only. Direct mode required a=, t=, s=, etc.

- The suggestion to See Librarian should be added to every possible response.

4. Entering and refining terms as individual search elements: misspellings, stop words, truncations and wild cards

Description:

When a searcher keys in a term which doesn't quite match any term on file, the system may respond tersely that it's "not on file," even though possibly relevant citations are indeed on file. Helpful systems assist in finding these near matches by using a variety of techniques.

Needs:

a. The system must accept upper or lower case letters, the absence or presence of spaces and punctuation marks, and in exact title searches, at least, the presence or absence of inital articles in English.

b. The system should respond to a term not found by displaying a list of terms preceding and following the entered term. It may suggest keyword searching when an exact match search fails.

c. The system must look for the entered term as the beginning of a longer string of data without an explicit truncation symbol (e.g. the dollar sign used by ACCS). The system may remove pluralizations and some common suffixes when patrons enter them in complete form.

d. If the system requires the use of any stopwords, this library must be able to choose which stopwords to use. If the patron's search results in zero hits because a stopword interfered, an informative message should explain the problem.

e. When a search results in a match, the number of titles which contain that term must be displayed.

f. The system should permit the entering of wild card symbols in positions where more than one character could produce useful matches. Example: wom*n retrieves both woman and women entries.

g. The system should treat common misspellings in a manner similar to good handling of headings with exactly one see reference: informing the searcher of a transfer, then transferring.

Issues:

- Have any systems helped us browse files of keywords? DRA did not.
- There have been reports that the Dynix system does provide for some handling of synonyms (and presumably common misspellings as "synonyms.") No one remembers seeing it.
- Spelling "errors" like Mc for Mac should produce suggestions for help or instructions to See Librarian. Not-on-file is not an acceptable total response.

5. Refining terms with cross references and notes

Description:

The name, word or phrase the patron enters may not be the same as that used in the controlled vocabulary of the system. The catalog should guide users to the desired entries and suggest other terms and sources provided in the authority control system.

Needs:

a. A search which leads to one see reference should lead to an "automatic" retrieval for the see reference. The user should be informed of the switching.

b. When the search word is a see reference to multiple terms, no switching should occur, but all the possible headings should be displayed so the patron may choose one and enter it. "AMA" is such a see reference. It abbreviates American Management Association, American Marketing Association, American Motorcyclists' Association and American Medical Association.

c. The system must be capable of displaying the see-also references and public notes that are part of HCL authority records.

Issues:

- Only DRA has been able to handle Need B. Should we insist on it? Are there other ways to accomplish the same result?

- The inability to display information stored in authority records is very serious.

- Since keywords can't be authority controlled, should patrons be instructed to try a direct/exact search first so cross references and notes will be displayed?

- Under what circumstances and in what quantity should see-also references and public notes be displayed in the catalog?

6. Combining terms and limiting searches with additional data

Description:

"Subjects" in present HCL catalogs may be phrases as well as single words. The "keyword" option required for the online catalog will index single words. The system must combine or allow the patron to combine these key words. If patrons use general terms for searching they will retrieve more titles than they can or wish to examine, so means of reducing this number must be provided.

Needs:

a. The system should automatically combine keywords typed in as a phrase.

b. The system should allow the searcher to combine terms with Boolean AND or OR operators. The NOT operator is optional if alternate means of limiting by format are available.

c. The system should allow the searcher to limit searches by format, language, publication date and by agency. Preferably these limitations can be entered before the search is executed the first time.

d. The searcher should be informed if a long search is in progress and offered the means to interrupt.

e. The searcher should be informed if the term(s) entered will result in a number greater than an HCL-specified number of hits.

f. The system should accept the input of entire headings even if they are long and subdivided.

g. The searcher should be able to save a search (or searches) and combine the results with subsequent search results.

h. The search history should be maintained until the terminal is returned to the beginning screen through timeout or intentional exit.

Issues:

- Should Boolean operators be made available to the public? How should they be explained? A printed guide should be provided and Help messages programmed in, if possible.

- Should searchers be allowed to complete huge searches that usurp significant system resources? If not, how should these (usually unintentional) requests be handled? DRA claimed that if system resources were adequate, even a search for UNITED STATES did not slow the system or require a long-seach-in-progress message.

- If a threshhold number of hits results from a search, suggestions for aborting it, narrowing or limiting it should be given.

- Limiting the number of search characters to a small number is unacceptable. There is no adequate way to distinguish titles or headings which have the same long initial character strings.

7. Requesting complete displays, related titles and printouts

Description:

Users may wish to see varying amounts of detail about titles which satisfy their search requests. They may wish to print information from one screen or to print bibliographies [like they used to photocopy book catalog pages.]

Needs:

a. The system should normally display bibliographic data with complete, spelled-out labels either along the top of the screen or on the left.

b. The system should display brief information on screens containing multiple titles from which to choose. The library must be able to choose which data elements to include.

c. Displays of intermediate and complete length should be labeled by this library and should be available with a simple command. A tagged MARC display is essential for staff use.

d. Catalog users should be able to print search results from any display level. One or more workstations per agency should include a printer.

e. Searchers should be able to sort the search results before printing a bibliography. They should also be able to print a screenful of information.

Issues:

- Most of the systems examined have provided full displays, including MARC displays, on request. Requesting such displays has sometimes required using extraordinary knowledge of the system. Is this acceptable?

- At least two systems have offered to display titles sharing headings or names with a found title. Is this a bell or whistle, or is it a feature that would substantially ease work at information desks? DYNIX suggested related works (probably from the tracings of a "found" title record).

- There seems to be unanimous support for printers in all libraries. Should this mean printers at some staff work stations, at staff work stations and at some public catalog stations, or at all monitored stations? One major concern should be maintaining supplies in some or several printers. Printing could save some staff time now required to re-search miscopied/ incomplete citations.

- Have any systems provided the ability to sort titles in a bibliography and to specify the elements to be printed? Are these facilities useful?

- The Gov Doc CD-ROM allows printing of the full display only. This is not acceptable for the catalog.

8. Requesting holding, location and status information

Description:

The present catalog gives neither location nor status of copies of materials. The ACCS gives this information for most circulating material, but access is limited to staff. One of the justifications for an integrated system is to allow patrons access to this information from the catalog terminal/workstation.

Needs:

a. The system should display copies with their availability and hold status without prompting when the search leads to a single title record.

b. The system should display copies with their availability and hold status when the searcher selects one title from a list of search satisfiers.

c. The system should display local agency holdings first, followed by others in an order determined by the libraries.

d. The elements in the display should be selected and organized on the screen by the library.

Issues:

- Would HCL consider a system that referred patrons to another (circulation) terminal for status and location information? No.

- Some displays of details have been cluttered or poorly organized. Should we try to require good displays or the ability to organize our own displays? Even though a system claims to let the library "write its own screens", some elements (like DRA's READING LEVEL) were not removable. At best they could be left blank.

- DRA claims to be addressing Need C. in 1989.

- What is the minimum acceptable information to be provided for holdings/location/status of serials? No system except CLSI seems able to provide the level of specificity we now provide.

9. Requesting materials not immediately available

Description:

The library's system concept involves a catalog which shows the holdings of the whole system, an extensive delivery mechanism and a policy of free reserves. Patrons have come to expect that materials from other agencies will be brought to a convenient place for pick up, that they will be notified when in-circulation material is available, and that their requests for inter-library loan or for purchase be considered.

Needs:

a. Displays of hold information must be available to staff. Summaries of such displays (numbers of reserves on a title) should be available to any searcher.

b. The system should allow both patrons and staff to place reserves.

c. The system should refer patrons to a librarian for titles not found in the HCL system.

Issues:

- What privacy issues are involved in allowing patron access to reserves information?

- Task force members have observed systems which allow patrons to place their own reserves. They anticipate that patrons will expect that capability at HCL also.

- If patrons are to place their own requests, then should the computer system explain why some materials are not reservable, lead them through requesting materials that are available in other agencies, requesting holds on materials that are all on loan, guessing at availability dates and setting cancellation dates? Should patrons initiate recalls for on-shelf items? A computer system should refer the patron to a librarian from the beginning to provide interpretation and guidance.

C. Cataloging/Authority Control Requirements

C. CATALOGING/AUTHORITY CONTROL REQUIREMENTS

1. Adding Records to the Bibliographic Database

Description:

HCL currently keyboards all order records, all original and copy cataloging and all titles into the circulation files. Catalogers use microfiche lists of authority terms. Bibliographic and authority files are stored on magnetic tape at Hennepin County Information Services. Only the ACCS files are completely online. A cataloging system should allow HCL to work at least as well as we work now. Preferably much redundant keying will be eliminated and catalogers will be able to view and maintain all data files online.

Needs:

a. The online system will have to accept title records in MARC format from tape, at least during its initial loading.

b. The system should accept MARC records transmitted electronically from Bibliofile or another MARC-based source.

c. The system should provide methods to edit or suppress data from incoming cataloging data sources via HCL-provided software.

d. The system must facilitate original cataloging from online catalogers' work stations. It should support templates, defaults within templates, and provision for defaults to be modified, with the modified forms continuing in force until changed again, or until signoff.

e. Word processing character addressability must be present to facilitate correcting long data fields.

f. The authority terms should be available for viewing from the same terminal during the cataloging process.

g. The circulation/reserves status should be available for viewing from the same terminal during the cataloging process.

Issues:

- Since HCL performs original cataloging on all AV materials and some print, the original cataloging facility needs to be easy and efficient to use.
- Will all keying be done by catalogers?
- Will catalogers be required to work with records in MARC format?

2. Editing bibliographic records

Description:

HCL modifies outside cataloging data extensively before allowing it to enter the HCL bibliographic file. HCL also needs to be able to upgrade older records on the file easily. Extensive review by editors and catalogers must be accommodated.

Needs:

a. Staff should be able to find, select, and edit any record in the database in online mode.

b. Catalogers should be able to search the bibliographic file with the same access capabilities available for other users, plus numeric identifiers like LC numbers, ISBNs and local control numbers.

c. The system should provide special status to titles in the database, but not visible in the public catalog. Titles awaiting their first review and withdrawn titles are two classes of titles worth holding for a time, but only if they can be kept from public view.

d. The system should carry the format used during initial online input into all displays used for review and editing.

e. If browsing lists are available, the filing order can be controlled manually.

Issues:

- If cataloging source records are added without review, and authority terms are generated from them, will the special status in Need C. (above) prevent the database from continuous "contamination"?

- Is the downloading of records to a microcomputer workstation for editing offline a possibility HCL wishes to consider? Or can we insist on a truly online operation?

3. Adding records to the authority file

Description:

Terms in authority fields in the incoming MARC records which don't match existing authority records are added to the authority file. It is also possible to add authority records which are not so generated.

Needs:

a. The authority records must be stored in an online file, linked to the bibliographic records which contain them.

   1) The system must be able to display the title records linked to any given authority term.

   2) It should be able to change all appropriate title records in response to a change in an authority term (global change).

   3) The system should accept authority records in MARC format from tape, at least during its initial loading.

b. The system should allow catalogers to view authority terms as they are adding or editing bibliographic records.

c. The system should compare incoming headings with existing authority data and report those which don't match.

d. The system should add new authorized forms to indexes with status codes indicating the (presumably low) level of review to which they had been subjected.

e. The system must provide for multiple see references, multiple see also references, public and cataloger's notes.

f. The system must report blind cross references, either routinely as changes in the collection produce them, or on demand through explicit searches for them.

g. The system must automatically maintain "see from" and "see also from" references, or maintain cross reference by way of their "from" references.

h. "See from" and "See also from" terms should be displayed for catalogers.

Issues:

- HCL has lived for several years with a relatively clean authority database. If the system's database will be continuously dirtied, we need reports of the new "dirt".

4. Editing authority records

Description:

Authority terms generated from incoming bibliographic records are "stripped". Cross references and notes are added, deleted and changed by editing these records.

Needs:

a. The file must be designed for searching and editing wholly online.

b. Changing an authority record must change all appropriate title records linked to it.

c. The file must be searchable by all the methods available in the public access catalog and by local control numbers.

d. Word processing character addressability should be available for editing authority records.

5. Disposing cataloging data into offline operations

Description:

HCL produces many printed and microfiche reports derived from catalog files. Online catalog terminals may not eliminate the need for some printed lists.

Needs:

a. The system should be able to print any record, with elements labeled as the library chooses, at any point in the cataloging process.

b. The system must facilitate the printing of spine labels and other labels and cards needed on or around materials. It might do this by printing the forms directly, or by supporting a programming language.

c. By providing for printing on demand, the system will provide for the downloading of individual title records into other computer systems.

d. The system must be capable for writing MARC title records to tapes or portable disks. The system should be capable of writing MARC authority records.

e. They system should be able to produce tapes for computer operated microfilming directly and in a timely manner.

f. The system will provide the mechanism to count various elements or file conditions and to display those counts in reports designed by the library.

D. Acquisitions Requirements

D. ACQUISITIONS REQUIREMENTS

BACKGROUND

Selection:

In Hennepin County Library, the order/acquisitions process begins with selection staff considering recommendations of review sources (professional and trade journals); library staff recommendations for titles, subjects and replacements; and public demand in the form of Patron Title Requests or reference questions. It may also start with staff visits to a vendor such as Bookmen. The selectors may be located in the Materials Selection Section, Southdale Information Services, the Government Center, Outreach, Bookmobile, and each of the Area and Community Libraries (See page 13, Inventory of Collection Materials/Services Purchased, for details).

Orders:

Orders for selected materials are prepared in each of the above locations and transmitted to vendors in a variety of ways. The only common denominator is the Technical Services Division/Acquisitions Section which must either issue a purchase order or approve an invoice for all materials for which County funds are expended. Some orders, such as for Government Documents, do not affect the normal order/acquisition process. They are ordered by number, are free, and are delivered to SdIS.

Delivery/claiming:

The majority of materials are received by freight or mail in the Acquisitions Section, but other materials are received in a variety of locations and by a variety of means: periodicals through the mail to each agency, paperbacks by delivery to each agency, etc. Claims for materials not received may start with each of the selecting agents, but most eventually end up as the responsibility of Acquisitions.

Receiving/paying:

The Acquisitions Section, in addition to being responsible for most receiving and claiming of materials, must verify that materials received are those that were ordered, solve problems with purchase orders, and approve invoices for payment. Presently, our acquisitions system and Hennepin County's accounting system operate separately. Differences between the two systems on records of expenditures, fund balances, etc., must be reconciled manually.The actual check to a vendor to pay for materials is issued by Hennepin County, not the Library.

Management reports:

Budget management information such as encumbrances and available funds is reported in hard copy only at the end of monthly accounting cycles. Since this is dated information by the time it is received, fund managers must estimate the differences by using other reports such as the Title Tally in order to keep from overspending.

REQUIREMENTS

An online order/acquisitions system for Hennepin County Library must:

1. Provide database access for a significant number of staff located in a variety of offices and libraries.
2. Have a database or linked databases large enough to contain bibliographic records for all titles being considered for purchase as well as those actually in the order process, and the ability to place reserves on these titles.
3. Have the ability to create bibliographic records for pre-publication orders.
4. Be integrated or linked to circulation and catalog databases so that public service staff and the public have access to the current status of orders. Reserve and circulation statistic reports should be accessible to the selection staff.
5. Use the MARC format for bibliographic records, BISAC/SISAC, the industry standards for order data.
6. Have the capability to transmit orders electronically, and receive information from vendors regarding the status of materials on order.
7. Be compatible with the new Hennepin County online Financial Accounting and Reporting System (FARS). Ideally, there should be the ability to link these two systems.
8. Contain a vendor file with vendor numbers the same as or linked to those used by FARS.
9. Update receiving information online or via a batch file, and hold invoices until all the terms of the purchase order have been met.
10. Have the ability to register encumbrances and expenditures to specific funds as they occur, and to produce fund reports on demand.

DESCRIPTION

The Order/Acquisitions Task Force has divided the Acquisition System into 10 parts, with a definition, a description, and a list of needs. The parts are:

Database Access
Online Ordering
In-process File
Name/Address File
Purchase Orders
Receiving/Paying
Claiming
Funds Accounting
Vendor Monitoring
Management Information

The following describes each of the above parts in more detail and contains prioritized requirements or desired capabilities:

DATABASE ACCESS

Definition:

One database or several linked databases containing bibliographic records, order information, circulation data and location for each item that can be accessed by staff and public. One search should locate a record at any point in the order/acquisitions process.

Description:

Database access for staff means access to library created databases, access to appropriate bibliographic utility files, and access to the databases of selected materials jobbers. For the public, access is limited to the library created database to check availability or order status of a title.

Need:

- A multilevel password security system that will limit access for the public, control access for public service staff, and prevent unauthorized orders or destruction of files.
- Records should be accessible by keys, ISBN, Title, Author, LC no., or combinations of these.
- On-order and in-process status must be obvious to users, staff or public.o Access to Hennepin County Library created databases should be on-line, in real time where possible, and available through a variety of access points, and not require use of more than one terminal.
- The ability to download records into the HCL database from biblio-graphic databases when the title is new and to create order records in BISAC/SISAC format from data in any of the files available.
- Access to a jobber's database is not essential at the time an order is placed. It is essential that order information from a jobber can be received and that the files can be updated electronically.
- Access by author/title to a pending file of items not yet ordered.
- Subject access to a pending file would be useful.

ONLINE ORDERING

Definition:

The ability to create and transmit material orders from a variety of order files to vendors capable of receiving electronically produced purchase orders.

Description:

Online ordering is the ability to create a file of order data that can be transmitted to vendors electronically. It does not have to be transmitted at the time of creation.

It is important that the industry standards BISAC/SISAC be used for the record format of the order data. A vendor file containing names and addresses to link an order via a vendor number is vital.

Need:

- Bibliographic and vendor information should be filled in automatically from bibliographic (HCL, BIP or other) and name/address files. The format should be predetermined so that information entered is automatically put into BISAC/SISAC formats for transmission.

- Other format requirements are:

    a. the ability to order multiple copies for multiple locations;
    b. standard forms that can be set up with default values added automatically;
    c. special notes fields for default and delay information for vendors.

- Ability to display and update the order record at any time prior to transmission of the order, and a sort should be available to pick up duplicate orders by author/title keys or other selected methods.

- Ability to automatically update fund accounts when an order is entered or is modified by either the library or the vendor.

- The ability to receive information from vendors online regarding the status of materials on order.

- At the time an order is placed, the bibliographic file should be updated with the order status data.

- Information about reserves on a title should be available during the order and acquisition process.

- Ability to access the order file by ISBN, author, title, vendor name or number, or purchase order number.

- Ability to print hard copies if/when needed.

IN-PROCESS FILE

Definition:

Gives status information on those items that are received but not fully processed.

Description:

The in-process file makes ordering more efficient and information for the public more complete. If the database is maintained as one file, portions of a record would need to be identified as bibliographic, order, in-process, fund, circulation, location etc. Different parts of the file would be accessible only to certain people. Data security and data privacy would be vital. In addition to bibliographic information, the record should contain quantity, format and fund information which would include change in status of an item. The time frame that an item stays on the file should be a variable set by the library.

Need:

- Access to each item record to record status information, receiving and cancel data.
- Ability for each TSD section to update the location of an item.
- Complete bibliographic information.
- Information on vendor, account, agencies ordered for.

NAME/ADDRESS FILE (VENDOR FILE)

Definition:

A file of the names and addresses of individuals and companies outside Hennepin County Library who charge us for collection materials and services. This file also includes the names and addresses of employees of the Library whom we reimburse for purchases made.

Description:

Each vendor/employee needs a unique identifying number. Name, address, and other information are recorded against that number. When documents are processed, the number indicates to whom an order should be sent or payment made. Optional information may also be provided: alternate "Remit to" address, returns address, telephone number, etc.

Need:

- Ability to use FARS vendor numbers or be linked to them so that they match numbers for orders with FARS numbers for remittance. FARS numbers have two components:

Vendor number	10 characters	required
Vendor group number	2 characters	optional

- Ability to assign new vendor/employee numbers and edit existing numbers online.
- Ability to look up vendor numbers online, using vendor number or vendor name.
- Ability to produce reports about a vendor or group of vendors.

PURCHASE ORDERS

Definition:

A document with the vendor name and address, title, author, publisher, price, ISBN, quantity, purchase order number, vendor number, fund number, date of order and shipping address for each item ordered.

Description:

An online system that provides flexible options for creating a purchase order.

Need:

- Ability to use the on-order file to print a purchase order.
- System should automatically calculate purchase order total, and check for/encumber available funds.

RECEIVING/PAYING

Definition:

The process of verifying that items received match items ordered before payment is authorized.

Description:

The receipt of goods should be recorded online and applied to the appropriate line of a purchase order to update the status of that line. For items received without purchase orders, the receipt of the items should be recorded for later matching to the vendor's invoice.

Need:

- The system should be capable of updating via a batch file from a vendor.
- Ability to match received items with items ordered.
- Ability to enter receiving quantity and invoice data but not release the invoice for payment.
- Ability to disencumber and expend funds for on-order items.
- Ability to flag all invoices that do not check out correctly because of an error made in keying or in billing.
- Ability to retrieve receiving data, record returns information, cancel information, and credit information.
- Ability to enter receiving data for the same title on the same purchase order number more than once (partial fills).
- Ability to record additional information: delay payment, stop payment and payment routing.
- Ability to retrieve Hennepin County check numbers using vendor numbers and invoice numbers.

CLAIMING

Definition:

Notification that material has not been received after a specified time period.

Description:

A system that produces and sorts claim notices, by vendor, with staff review before being sent.

Need:

- Flexibility to assign different claim dates depending on type of material.
- Ability to claim items not ordered online(standing orders, etc.).
- Print claims notices for selected orders.
- Ability to assign "cancel after" for each order if desired.
- Automatic adjustments to accounts for cancelled items.
- Automatic removal of a claim when the file for that order is updated by new information from the vendor.
- Claims not filled by a vendor after notification should be cancelled automatically.

FUNDS ACCOUNTING

Definition:

The automatic encumbrance and expenditure of funds from appropriate accounts when material is ordered and received.

Description:

Online encumbrances and expenditures of specified funds. Each fund with the ability to separate costs by agency, reference, circulating, etc.

Need:

- A single order should be able to be charged to one or many fund accounts.
- It should be able to check for available funds, provide fund status online, realtime.
- Ability to create encumbrances/expenditures for each fund number as orders are released and materials received.
- The ability of the system to determine, by Library fund number, the average cost of materials; shipping and handling costs; and quantity ordered and quantity received.
- The ability to determine reference or circulating costs by agency.
- The ability to calculate the percentage of price increase by fund number.
- The system should make it easy to change fund names and numbers.

VENDOR MONITORING

Definition/Description:

The automatic process of tracking the performance of each vendor over a period of time, and the ability to track a vendor's performance with each order assigned to it.

Need:

- Report on the number of orders placed with a vendor.
- The fulfillment rate of each order.
- The average number of days to fill an order.
- The number of cancellations.
- The average discount.
- Shipping, handling, postage, and other vendor charges.
- The number of claims generated.

MANAGEMENT INFORMATION

Definition:

The ability of the system to produce reports on expenditures, fund balances, material distribution, circulation and related information which can be used to manage funds and evaluate selection effectiveness.

Description:

The system should have the ability to produce management reports in standard report formats and the ability to modify reports for specific needs. Full reports should be accessible online for selected staff.

Needs:

- A report on the number and cost of items and titles ordered for each unit of the library for any specified period of time, sorted by adult, juvenile, and reference categories as well as by format (paperback, audio cassette, etc.).
- Fund reports on demand.
- Report on items and titles received.
- Report on circulation of material purchased within the last 12 months.
- Report on shipping and handling costs.
- Report on vendor performance.
- Report on discount patterns by vendor and format.
- Report on items cancelled.
- Report on unintentional duplicates.
- Report on gifts (number and value).
- Report on the percent of inflation for standing order titles during year.
- Report on amount spent per vendor.

Acquisitions Task Force: Inventory of Collection Materials/Services Purchased

Materials Purchased		Selected By: MSS	SdIS	Agency	Ordered By: ACQ	MSS	Proc.	SdIS	Ordering Method: Online	Paper PO	Letter	Received By: ACQ	Agency	Proc.	SdIS	Claimed by: ACQ	Agency	Proc.	SdIS	Accounting: Encumbered	Exp/When Rec'd
Binding: Books	(8209A)	X					X			X				X							X
Binding: Periodicals	(8209M)		X				X			X				X				X			X
Binding: Permabound	(8209C)	Discontinued																			
Adult Books	(8640A)	X				X			X	X		X								X	
Juvenile Books	(8640B)	X				X			X	X		X								X	
Encyclopedias	(8640C)		X		X					X		X								Manual	X
Reference Books	(8640D)		X			X			X	X		X								X	
Paperbacks-MSS	(8641A)	X				X			X	X		X								X	
Pamphlet File	(8641B)		X		X			X			X	X			X					Manual	X
Puppets	(8641C)	Program Librarian			Acq. or Program Lib.						X	Rec'd in Acq. or CSSD									X
One-Shots	(8641D)	X		X	X					X		X									X
Paperbacks CLD, ALD, OR	(8641E)			X	Direct Purchase				Direct Purchase			Agency Pickup									X
Computer Software	(8641F)	X				X			X	X		X								X	
Periodicals & Newspapers	(8642A)		X		X					X			X			X	X			Manual	X
Microfilm Period. & News.	(8642B)		X		X					X		X				X					X
Prebound Periodicals	(8642C)		X		X					X					X				X		X
Standing Orders	(8643)		X		X						X	X	X (Services)			X	X (Services)			Manual	X
Telephone Directories	(8643A)		X					X	Telephone	or	Letter	(Domestic) X		(Intl) X					X		X
Art Originals	(8644A)	X		X	Area Library Staff				Ordered In Person			X									X
16MM Films	(8645C)	X				X				X		X								X	
Phono, Audio Cass., CD's	(8646A,C,G)	X				X			X	X		X								X	
Video Cassettes	(8646B)	X				X			X	X		X								X	
Kits and Slides	(8646E)	X				X			X	X		X								X	
Bifolkal Kits	(8646F)	Outreach Libr.			X						X	X									X
Gift Materials	(0400 - 4890)	X		X	X	X			X	X	X	X	X								X
Government Ctr. Info. Lib. Materials				X	Acquisitions & GCIL					X	X	X	X			X	X			Manual	X
New Library Collections: Building Fund		X	X		X	X			X	X		X				X				X	

ASD: 9/06/88

Part III

Alternatives for Meeting Requirements

ALTERNATIVES FOR MEETING REQUIREMENTS

- Alternative 1: minimal change to the status quo.
  Acquisitions: BATAB (the current system)
  Cataloging: Bibliofile and the current batch cataloging support systems
  Public catalog: Bi-monthly microfiche (unchanged)
  Circulation: CLSI system, upgraded as directed by CLSI

1. Which of the requirements prescribed by the task forces would this alternative satisfy?

   - This arrangement provides data at least as current as the present systems.
   - It supports authority control in the catalog.
   - It provides powerful, though cumbersome, search capabilities in the catalog.

2. Which requirements would this alternative not satisfy?

   - The requirements most recently unmet are for good, steady response time.
   - And, for automation sufficient to permit staff to provide excellent public service.

3. What benefits would this alternative provide?

   - This alternative is familiar and predictable, both in performance and cost
   - Its specific operating characteristics need little review.
   - The retraining of staff should be less than with other alternatives although CLSI staff have mentioned the possible rewriting of the circulation software in an upcoming release.
   - The revision of procedures manuals should be less with this alternative.

4. What problems would this alternative present or leave unsolved?

   - The acquisition and cataloging of materials is labor intensive.
   - The computer systems do not help enough with accounting or with authority control, so acquisitions personnel run supplemental systems and catalogers look up authority terms on microfiche.
   - The acquisitions and cataloging microfiche are (almost literally) static "snapshots" of dynamic data. As snapshots which take three to five weeks to "develop," they do not show the library's newest materials or any status data, and they do show materials which are no longer owned or no longer available.
   - Microfiche may be an obsolescent technology. If so, its support will degrade as support for printed book catalogs began sagging a few years ago.

5. How might the answers to 1 through 4 change or affect service to the public?

- Unless surging response time is brought under control, staff will have to give more attention to the circulation system than to patrons.
- If response time is controlled, but library use continues to increase by several percent per year, then at least the following factors will make these systems progressively less adequate:
  - Buying and cataloging more titles will (or would) necessitate not only more supplemental work, but more work made more complex and difficult by the number of titles in the collection and in any backlog which might develop. This affects public service by weakening the collections in the libraries.
  - Catalogs lacking holdings and status data, plus any data for the newest, most requested materials, are causing patrons to go to librarians, having either used or bypassed the catalog, for searching of the circulation system. This is certainly compounding the burden that increased library use places on staff.
  - If microfiche is an obsolescent technology, then production lags will grow, quality will degrade, and the last two mentioned problems will worsen. This type of "tangential potential" should concern a few of us (though only a few).

6. What are the cost factors and general costs of implementing this alternative?

- The upgrade that CLSI has specified as of 9/88 has a price near $400,000.

7. What are the cost factors and general costs of operating this alternative?

- CLSI's maintenance strategy currently works about as well as it can. Service is usually adequate, sometimes excellent, and roughly three to four times as expensive as it might be under a more conventional strategy. The circulation system also requires frequent expensive upgrades. The costs of the other systems are not terrific, could increase, but seem pretty minor compared with the cost of maintaining and regularly upgrading the circulation system.

8. How might the answer to 5 through 7 change or affect the library?

- Many of the things described above work together in complex ways to demand an ever increasing share of the library's resources for progressively less adequate automation. Unchecked, this would eventually lead to deterioration of public service, and then of public support. Balanced and managed, this situation puts increasing pressure on the balancers and managers.

9. Where would this alternative leave the library after five years?

- Acquisition and cataloging support might show minor evolutionary improvement after a decision that the present systems would have to run for five more years. CLSI might improve the circulation system. The systems would certainly remain separate; operating them all would probably cost more; the library's overall situation might--at best--be as it is, only tighter, more stressful, more urgent, or more nearly desperate.

- After (or within) five years, HCL would certainly be looking at replacing the microfiche catalog. HCL staff would be looking at the alternatives for integrated systems in the marketplace (again).

- Alternative 2: Stand-Alone CD-ROM Catalogs
  Acquisitions: Unchanged
  Cataloging: Unchanged
  Public Catalog: Periodically updated Compact Disk-Read Only Memory
  Circulation: CLSI system, upgraded as directed by CLSI

1. Which of the requirements prescribed by the task forces would this alternative satisfy?

   - It might be possible to update CD-ROM catalogs bimonthly (or more often) and to provide data as current as the present systems.
   - Some CD-ROM systems may provide consistency, cross reference, and notes.
   - Running on microcomputers, CD-ROM systems provide interactive search capabilities, some of them "friendly."

2. Which requirements would this alternative not satisfy?

   - It might not be possible to provide data on CD-ROM as current as the data in present systems;
   - CD-ROM systems vary in the quality of their authority control (if any), online search capabilities, and friendliness; beyond these testable characteristics, CD-ROM catalogs would meet no requirements not met by microfiche.

3. What benefits would this alternative provide?

   - This alternative should yield easier and better searching. It would certainly yield easier updating in the libraries. Handling one disc per work station would be a vast improvement over handling hundreds of microfiche per station.
   - Friendly interface, attractive format, keyword searching.

4. What problems would this alternative present or leave unsolved?

   - A CD-ROM catalog would be an interactive catalog. It would therefore appear to provide access to a comprehensive library database. But the data on the disk would be the same data that is currently represented on microfiche: cataloging data with no circulation data; no cataloging data for most requested materials in the collection (i.e. the newest materials); and cataloging data for materials no longer in the collection.
   - CD-ROM may come to be perceived as a technology seldom appropriate for the maintenance of library catalogs. If this happens, vendor support for CD-ROM will decline as profitability declines.
   - Libraries often say that this makes a large capital expense unnecessary as microcomputers (CD-ROM) readers can be purchased a few at a time. This assumes 5-7 years of a combined CD-ROM/fiche catalog.
   - CD-ROM equipment requires more space - the amount of space available at the desks is limited. If we consider the CD-ROM for the sake of form alone, the appearance of the equipment will appear as "progress" to the public, and it would mean less money for budgeting committees, but it would not be an acceptable alternative in the long run.

5. How might the answers to 1 through 4 change or affect service to the public?

- By providing good, easy, friendly searching, a well designed CD-ROM catalog would probably increase the burden on public service personnel: more patrons would identify materials and then ask librarians to locate those materials. Librarians would become "interfaces" to the ACCS.
- Some patrons would think through the costs and benefits of this alternative, and then ask questions for which public service staff might have no answers.

  - Questions they would ask:
    1) Why is the information on your computer different than mine?
    2) Why didn't you design it so I can tell whether something is checked out?
    3) Why can't I place my own reserve like in Ramsey?
    4) Where is the information on new materials and materials on order?

6. What are the cost factors and general costs of implementing this alternative?

- Late in 1987, the microcomputers needed for a CD-ROM catalog were estimated to cost about $500,000. Several factors considered later by the Office Automation Task Force suggest that the 1987 figure should have been something not less than $750,000. This would be in addition to a next upgrade of the circulation system ($400,000 or so), plus whatever it would cost to modify cataloging and processing operations, which obviously revolve around the current systems and files.
- The cost factor may be more economical. 300 terminals and a large enough processor to absorb them in an integrated system vs. the cost of 300 microcomputers with CD-ROM drives with the maintenance - how much cheaper would the micros really be? Probably not very much.
- There would be training costs for an additional system and technology.
- If we didn't purchase all public workstations at once but phased them over three years - (300 ÷ 3 = 100 per year) or about $170,000 per year, we would probably see this then as an operating rather than a capital expense.

7. What are the cost factors and general costs of operating this alternative?

- The cost of operating the circulation system might decrease slightly if fewer terminals were provided for staff. This cost would be more likely to increase slightly, because more terminals would be needed. Either way, the cost of a large number of microcomputers, plus data processing facilities to keep them full of reasonably current data, plus whatever might be needed to support acquisitions and ancillary functions, should significantly exceed the cost of the present systems.
- There would be ongoing training costs for this added system and technology. These costs could be high if librarians used the CD-ROM catalog too seldom.
- If CD-ROM does come to be seen as a technology seldom appropriate for catalogs, this will probably raise costs while quality declines.

8. How might the answers to 5 through 7 change or affect the library?

   - The difficulty of describing the probable impact might only be exceeded by the difficulty of the impact itself: confusion bordering on chaos, with many machines for many purposes at most work stations.

9. Where would this alternative leave the library after five years?

   - If this alternative lasted for five years, another Library Automation Project would be under way to replace it.

- Alternative 2a: CD-ROM catalogs supplemented by updates on disks, a la the Library Corporation's Intelligent Catalog. (This is not really a separate alternative. It is an idea for keeping CD-ROM catalogs current without overly frequent remastering.)

3. What benefits would this alternative provide?

   - In some libraries, this idea might permit the maintenance of data for the newest library materials. Whether this would work in this library is uncertain.

4. What problems would this alternative present or leave unsolved?

   - Certainties are that this idea would cost more;
   - It would necessitate frequent transmission of large masses of data to many work stations in all libraries;
   - It would support a static representation of dynamic data.
   - This is not a particularly good fit for a library that concentrates on making new materials available.
   - It would be difficult to include such information as: where is the material and has it been ordered. Recently acquired materials would not be on the compact disc.

- Alternative 2b: CD-ROM catalogs capable of connecting to the circulation system and functioning as terminals to retrieve status information.

  This alternative is not (to our knowledge) on the market. Tacoma Public Library has written about plans to develop such a system. It is an idea considered and discarded by designers concerned about the work load on central processing units, and it is an idea which might be put forth by sales persons concerned about losing prospects. If this is ever done, and it works, then it will be interesting to see whether and why the catalogs are ever disconnected from their central systems. (If they never are disconnected, then their microcomputers will function as exceedingly expensive terminals, saving very little work on their central processors.)

4. What problems would this alternative present or leave unsolved?

   - People would have to learn two separate protocols and vocabularies to access each system.

- Alternative 3: a separate, non-linked online catalog.
  Acquisitions: Either unchanged or appended to the second system.
  Cataloging: Performed within and for the second system.
  Public catalogs: Provided by the second system.
  Circulation: CLSI system, upgraded as directed by CLSI.

1. Which of the requirements prescribed by the task forces would this alternative satisfy?

   - This arrangement could satisfy most requirements, except that data would be available through two sources, not one as prescribed by the 1983 task force.

2. Which requirements would this alternative not satisfy?

   - That one (at least: the satisfaction of other demands would depend on the quality of the second system).

3. What benefits would this alternative provide?

   - Hopefully, replacement of all microfiche, with better and easier searching of the data now provided on microfiche.

4. What problems would this alternative present or leave unsolved?

   - Patrons wanting specific materials would ask librarians to search the circulation system. At best, librarians would do work that patrons might prefer to do for themselves, and which patrons could better afford to do. At worst, the two systems would provide conflicting answers, e.g. that a work has been in the collection, a copy has been assigned to the library where the searches have been conducted, but neither that copy nor any other copy is available or likely to become available in the near future.
   - Staff would need to know two separate command systems for accessing two separate systems.

5. How might the answers to 1 through 4 change or affect service to the public?

   - An increased work load, and probably some difficulty explaining why the library would own two separate systems.

6. What are the cost factors and general costs of implementing this alternative?

   - This alternative would probably cost less to set up than an integrated system, although training costs could be high because of a need to maintain training on the circulation system.

7. What are the cost factors and general costs of operating this alternative?

   - This alternative should cost more to operate than almost any other possible alternative. The cost of operating the circulation system might rise or fall a bit; the second system should cost less to operate than the circulation system; but the second system would be complex and complete with terminals, communication devices and lines, central processing equipment, software, and staff.

8. How might the answers to 5 through 7 change or affect the library?

   - This alternative might work. CLSI inadvertently marketed something like it in its public catalog of a few years ago, and corrected away from this alternative because it is an intrinsically poor alternative.

9. Where would this alternative leave the library after five years?

   - Attempts to integrate the two systems, either in fact or in effect through procedures, would begin in much less than five years. The attempts would probably fail: the CLSI system is closed and safe from tampering and from aid, and the key information is in the circulation system.

- Alternative 4: CLSI system expanded for all functions.
  Acquisitions: CLSI's system plus access to an external database.
  Cataloging: Performed within the MARC portion of the CLSI system.
  Public catalogs: As provided by CLSI.
  Circulation: CLSI system, upgraded to support all functions.

  Members of the LAP Acquisitions, Circulation, and Public Catalog/Cataloging Task Forces viewed demonstrations of CLSI's acquisition system, public catalogs (CLCat and CDCat) and cataloging systems November 1-2, 1988. The CLSI Circulation System is the software HCL now uses.

  Because this alternative evaluates a vendor at a specific point in their system development and because the requirements used in the evaluation are those specific to Hennepin County Library; the results of that evaluation are not included in this report. Readers interested in discussing the evaluation with library staff should contact the library.

- Alternative 5: To actively seek from the marketplace an integrated or transparently linked system.

  Acquisitions: Probable non-CLSI integrated or transparently linked system.
  Cataloging: Probable non-CLSI integrated or transparently linked system.
  Public catalogs: Probable non-CLSI integrated or transparently linked system.
  Circulation: Probable non-CLSI integrated or transparently linked system.

  The investigation of this alternative involved the examination of integrated systems provided by vendors other than CLSI. The purpose of the investigation of this alternative is to determine if other vendors offered significantly better systems for automation of the four functions than did CLSI. If this alternative is a feasible alternative, then the library would engage in a process to seek an integrated system vendor. The investigation must determine if vendors other than CLSI offer such a significant improvement over CLSI that it would be worth the effort to go through the process and to retrain staff in new circulation procedures.

  Selection of this alternative does not eliminate CLSI. It means that the library would go through a process to consider other vendors besides CLSI.

  The investigation of this alternative was the most time consuming part of the Library Automation Project activities. It involved becoming familiar enough with the integrated systems marketplace to determine what vendors might be real possibilities for HCL and to determine if these vendors are significantly better than CLSI to warrant the time and effort needed to seek a system from the marketplace.

  Numerous vendors were examined through site visits. These cannot be described as in depth examinations but did give LAP members some understanding of the capabilities of each vendor. Only one vendor was examined in depth. That vendor was Data Research Associates (DRA). It was examined in depth because:

  1. DRA does support very large libraries like Hennepin such as Los Angeles County and Cleveland Public Library.
  2. They were eager to come and invited themselves.
  3. There is no metro area library having a DRA public catalog that LAP members could view through a site visit.

  This alternative evaluates a number of vendors at specific points in their system development. Most of the evaluations were conducted at operational sites which may be using a vendor system's functions in a unique way. The requirements used in the evaluation are those specific to Hennepin County Library. Because the evaluations are "snapshots" against Hennepin specific requirements, the results of those evaluations are not included in this report. Readers interested in discussing the evaluation with library staff should contact the library.

- Alternative 6: Separate systems linked by HCL staff.
  Acquisitions: Vendor A linked to BCD by HCL.
  Cataloging: Vendor B linked to ACD by HCL.
  Circulation: Vendor C linked to ABD by HCL.
  Public Catalog: Vendor D linked to ABC by HCL.

4. What problems would this alternative present or leave unsolved?

   - It is difficult to keep such a system linked because of new developments that require re-linking.
   - Problem solving is complex.
   - One system placing the blame on another system.
   - Need for skilled people who can deal with the tedious tasks required to maintain the linkage and an overall duplication of effort.
   - This would also require repeated new connections as developments occur.
   - This would call for as many kinds of training as there were systems, plus overall training for the use of all the systems.

Part IV

Selected Alternative

SELECTED ALTERNATIVE

Alternative 5: To actively seek from the marketplace a system that integrates circulation, cataloging, online public catalog, and as soon as possible, acquisitions.

Rationale

There are at least two or three systems in the marketplace that could provide a system that integrates circulation, cataloging and the online public catalog in such a manner as to meet HCL's basic requirements for those functions. This was not the case in 1983.

The integration of at least circulation, cataloging, and the public catalog was determined to be of great value both in terms of public service and also in staff resources needed to support those functions.

Project members determined, after a review of the marketplace, that there were integrated systems in existence that were significantly better than the integrated system offered by the current circulation control vendor. They determined that the difference was significant enough to call for a more in depth examination of those systems through a bid process.

Implementation Plan

1. Establish by March 1, 1989, a small selection team to draft the Request for Proposal/Bid.
2. Determine Alternative 5 Capital Budget based on current marketplace by March 1, 1989.
3. Determine Alternative 5 1990 Operating Budget by March 15, 1989.
4. Conduct site visits to libraries similar in size to HCL where likely systems are operational April-May 1989.
5. Prepare Request for Proposal/Bid (RFP/B) by August 30, 1989*.
6. Develop an RFP/B evaluation method by August 30, 1989*.
7. Discussion of RFP/B with Hennepin County Purchasing during September 1989.
8. Issue RFP/B by October 1, 1989 (this will depend on Purchasing's schedule).
9. Deadline for Proposal/Bids December 1, 1989.
10. Evaluate responses and select vendor by January 31, 1990*.
11. Develop system implementation plan with vendor by March 1990.
12. Start to implement new system in April 1990.

*Members of the LAP Task Forces would be asked to participate in reviewing specifications, developing an evaluation method and in the evaluation and selection of a vendor.